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FROM THE MEMORIAL VOLUME OF THE BOSTON SOCIETY OF NATURAL HISTORY.

THE EDUCATIONAL PRINCIPLE,

AS

RECOGNIZED AND EXEMPLIFIED IN THE HISTORY OF THE SOCIETY.

Remarks at the Semicentennial Celebration,

BY R. C. WATERSTON.

Printed by request.

PRESS OF A. A. KINGMAN:
MUSEUM OF BOSTON SOCIETY OF NATURAL HISTORY.
BERKELEY STREET.
1881.

From the Anniversary Memoirs of the Boston Society of Natural History.

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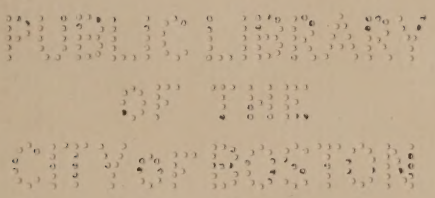

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THE EDUCATIONAL PRINCIPLE,

AS EXEMPLIFIED

BY

THE BOSTON SOCIETY OF NATURAL HISTORY.

On a semi-centennial celebration like this, while we have reason to congratulate the members of the Society of Natural History here assembled, on the great success which has crowned our past efforts, and on the cheering prospects of the future, which dawn before us like the morning of a yet brighter day, still we cannot but recall with feelings of sadness and solemnity the many who have labored with us in the earlier history of the Society, no longer here. Largely to their unwearied efforts are we indebted for the prosperity we now enjoy. Constant inspiration comes to us from the remembrance of their quickening zeal, their love of knowledge, and their generous desire to communicate to others, what they so profoundly valued themselves. How heartily do we wish they could be with us, on this eventful day. And yet, as we look around upon these walls, and gaze upon the life-like portraits of the past officers and benefactors of the Society, it seems as if, in very truth, they were actually here, participating with us in the privileges of this occasion.

Before us, is our first President, Dr. B. D. Greene, with his calm expression of blended sweetness and power. A love of nature pervaded his life. Extensively on this continent, in the tropics, and in most of the countries of Europe, he diligently pursued his botanical researches. Blessed with ample means, he was able to make his investigations under every advantage. Years which might have been given to luxurious repose, were by him gladly devoted to earnest study. Thus did he acquire a knowledge seldom surpassed, and while constantly consulted by younger botanists, never did he decline to impart from his abundant resources. We do not forget that his rare herbarium, contain-

ing the results of long personal industry, and the fruit of more than a quarter of a century of intercourse and exchange with Sir William Hooker and other distinguished botanists in every section of the globe, including plants gathered during the first Expedition of Sir John Franklin, constituting in all an invaluable collection for quality as well as quantity, we do not forget that this he presented to the Society, together with between one and two thousand volumes of botanical works from his library, and that at the time of his death, he enriched the Society by a munificent bequest.

And here by his side, is "the beloved physician," Dr. Augustus A. Gould, who from his large professional labors, could always find time for the benefit of this Society. In the department of conchology he was an acknowledged authority. The collections here bear testimony to his zeal. I well remember the interest he awakened by one of his lectures to teachers within these walls. Many of his hearers stopped and expressed their wish to visit in his company the sea-shore, that they might gather shells on the sands and listen to his instruction in the midst of Nature. He made arrangements with them on the spot, and within a week they went together to a neighboring beach, and there they passed such a day as they will never forget.

And here is our friend Professor Jeffries Wyman, who shunned popularity, rather than sought it, and who cared always to *be* and never to *seem*. His aim was ever Truth, simple, absolute Truth. Indefatigable in his researches, he would never abandon any investigation until it was thoroughly completed, and would leave nothing for students who should come after, but astonishment at what he had accomplished. While engrossed in his studies I doubt if he would have been disturbed though an armed force had cannonaded the building. It was said of Constable the artist, that in the fields he would sit so calmly in his contemplation of the landscape, that the field-mice would creep into his pocket. I think they might have done the same with Professor Wyman, though I would not answer for it that they might not become, under his hand, interesting specimens in Comparative Anatomy. Unassuming in manner, and with a mortal aversion to pretentious conceit, no man valued true merit more heartily than he did, or was more earnest to assist struggling endeavor. His name is now honored as widely as science is known.

And here we look upon the face of Agassiz whose benignant smile is to-day, as it ever was, a benediction. How absolutely with him the man of science became the acknowledged Instructor. Whether in the halls of legislation or the popular assembly, or before a convention of teachers, or in his own private lecture-room, he was the Educator. He seemed born for this vocation. His gift of speech, his genial spirit, his sympathetic and

magnetic power, made all listen with avidity. He knew not only how to gather, but how to impart. Whether he was discoursing upon glaciers or embryology, upon the structure of animal life, coral-reefs, star-fish, or an oyster, he was alike able to arrest and rivet attention, leading the mind from point to point, wondering and delighted, until rising above the individual it grasped the universal, and seeing the hidden law, it recognized through that, the Divine Intelligence.

With voice, manner, look, he held entranced the hearer, leading him onward from stage to stage in the line of progress. In all he did, he was preëminently the teacher of the individual, the community, the nation. "I have been," he said, "a Teacher ever since I was fifteen years of age. I am so now, and I hope I shall continue to be all my life." He did so continue, and so he still is; through the memory of his life, and through the words he has left us, he is emphatically the Educator; kindling a desire for knowledge and the love of progress. The increasing interest in the study of natural history, seen everywhere, how much he did to awaken!

While we look upon that countenance, do we not all recall those words of Longfellow addressed to Agassiz on his fiftieth birthday, where Nature is represented as speaking:

"Come wander with me," she said,
"Into regions yet untrod;
And read what is still unread,
In the Manuscripts of God!"

"So he wandered away and away
With Nature, the dear old Nurse,
Who sang to him night and day
The hymns of the Universe!"

And even thus, by night and by day, to every true-hearted Naturalist, Nature pours forth her celestial melodies:

"And whenever the way seems long,
And our hearts begin to fail,
She will sing a more wonderful song,—
Or tell a more marvellous tale!"

The members of this Society know full well the deep joy that is awakened through that harmony with Nature which comes from the study of her works. The vast collections of wonders treasured up within these walls, are infinitely more to the naturalist than curiosities. They are revelations of eternal laws. They are the condensed history of

the ages. They converse, in a mysterious language, of things that were; unfolding the marvellous processes that are ever going on in the hidden laboratories of the earth.

According to our power of observation, the development of our faculties, the extent of our knowledge, and the elevation of our own nature, will be what we shall here find and enjoy. Such collections as are within these walls will help us to ascertain whether the works of the Almighty have a language which we can interpret. Here, according to our susceptibility, will a love of knowledge be stimulated, the intellectual energies quickened, and all that is best and noblest in our nature called into activity.

Not as a place for idle amusement were these walls erected. Not to gratify a vague inquisitiveness were these collections gathered. Not for spinning the gossamer threads of fanciful speculation were these halls and lecture-rooms dedicated. But for the highest culture of which man is capable. For the acquirement of solid information. For the opportunity of studying results gained by scientific explorers all over the globe. We cannot personally accompany Sir Edward Parry and Sir John Richardson to the Arctic regions, or with Humboldt climb Chimborazo, or penetrate the forests with Audubon, or sail in "Her Majesty's ship" the "Beagle" round the world, but we can come here and study the result of such labors. All that is of deepest interest between the equator and the two poles, is here brought together. In books of voyages and travels, in works upon botany, zoölogy, and palaeontology; through specimens of rocks, ores, and fossils, gathered from every zone: what branch of the natural sciences may not here be investigated? Here is opportunity for observation and thought, analysis and comparison. Who will affirm that such an institution is not an essential part of our whole educational system, from the elementary School, up to the University; yes, and onward through that continued education which shall extend to the utmost limit of life?

This educational principle was recognized from the very commencement of the Society, its avowed purpose being "the encouragement and promotion of the Science of Natural History," which it was distinctly stated, the friends of the Society not only desired for themselves, but that the interest might be extended far beyond their own circle.

They were, however, few in number, and with limited means; a scanty library and a meagre collection, with as yet but feeble response from the public. This now populous city was then not much more than a village, and the very taste which the founders of this institution sought to direct and foster, had first to be created. We can hardly know how they surmounted the difficulties they had to overcome. Still they persevered until at length they became established in a building of more adequate accommodation in Mason

Street. Through every stage, there was a recognition of the same educational principle, and, as their opportunities were enlarged, this purpose became more and more prominent. Not only scientific students and intelligent citizens availed themselves of its advantages, but often entire schools, with their teachers, visited the Museum for a day's study; the curators and officers of the Society giving explanations in their several departments, thus rendering the occasions of real service to both masters and pupils.

As the collections accumulated, and the beneficial influence of the Society became more fully demonstrated, a larger field constantly opened; and an appeal was at length made to the Commonwealth for an appropriation of land upon which a more suitable building might be erected. The motive urged was, that the institution would thus be established "*on a permanent basis of augmented usefulness.*" It was declared that the result of its thirty years' efforts had been a rapid advancement of knowledge, with an almost universal dissemination of a love for the natural sciences, that now there was a general recognition of its claims to an honorable rank in our system of public education, while it was acknowledged that its labors tended to promote both the intellectual and material prosperity of the Commonwealth.

Thus while it was well understood that scientific men and professional students were to have every advantage within command of the Society, still it was also understood that the classification of all the collections, and their entire arrangement, was to be such that the public generally should have opportunity of gaining correct knowledge, and that such practical aid should be rendered to our schools, as might be invaluable in its results.

My recollection of this Society goes back to the time when it had its rooms in the old Athenæum in Pearl Street. The building in Mason Street I often frequented, and at the time when the plea was made for aid from the Commonwealth, I had the privilege of being one of the petitioners, and acted with the committee, addressing the members of the Legislature at the State House. I recall, as if it were yesterday, the interest of that time. I had just returned from Europe, and during an absence of several years had enjoyed opportunities of observing the working of such institutions abroad, and feeling strongly that the educational principle was of the utmost importance, I dwelt upon it in my statements. That this view had weight with the members of the Legislature, I have reason to know, and upon this consideration the generous aid of the Commonwealth was granted.

I well remember an address by Professor Agassiz, at that time, in the House of Representatives, on which occasion he dwelt upon the desirableness of training the young, from their earliest years, to observe and study the works of God in Nature, urging this as

among the best means of disciplining the intellectual powers, purifying the taste and exalting the character. He insisted that the study of the phenomena of nature was one of the most potent means of developing the human faculties, and that such education should be introduced into the schools as soon as practicable, and made an indispensable part of all education; he trusted that the time when the importance of this view would be fully recognized was only so far remote as was necessary for the preparation of teachers capable of properly imparting this instruction. The only difficulty, he added, is to find teachers equal to the task, and the task is no small one. The whole force of his argument went to prove that an institution like this, to aid teachers in their preparation, was of inestimable importance. Here, as we may easily understand, those who have an aptitude for such studies, may find materials, examples, illustrations, suggestions, all brought to their hand arranged and classified. With such advantages the study of natural history may be interwoven with the whole system of education, and become one of its most essential features.

After this building was completed, additional funds were requisite, to carry out the work contemplated. The Commonwealth had granted the land. The building was erected by generous contributions. Now, therefore, that forty thousand dollars in addition was to be given by its earnest friends, it was not simply to render it more attractive to citizens and strangers, but it was avowedly to make it "*one of the first Educational Scientific Institutions in the Country.*"

This Society has not rested satisfied with making profession of this purpose. It has lived up to its profession and its purposes have been faithfully carried out. Every promise has been kept, and every reasonable anticipation realized.

Persons who are not thoroughly acquainted with this Society, can hardly understand the amount of talent and labor which has been concentrated in this work. What self-sacrifice on the part of individuals, unremitting perseverance and toil have been necessary to complete every arrangement.

No one knows better than yourself, Mr. President, that no money could pay for the thought and labor which has been freely rendered here by the officers and friends of this institution, while their love for the Society and the cause to which it is devoted, has been in their estimation an ample reward.

After the dedication of the building, the work first inaugurated was a series of lectures and addresses in this hall to the Teachers of the Schools of Boston. Between six and seven hundred teachers availed themselves of the privilege. At the introductory meeting

the Governor of the Commonwealth, John A. Andrew; the Mayor of the City, F. W. Lincoln; the President of Harvard University, Thomas Hill; the Secretary of the Board of Education, Joseph White; the Superintendent of Schools, John D. Philbrick; and George B. Emerson, one of the earliest members of the Society and afterwards its President, took part, making it a memorable occasion.

After this there were lectures on successive weeks by Professor Jeffries Wyman, Dr. Asa Gray, Dr. Augustus A. Gould, Professor W. B. Rogers and others. These lectures were amply illustrated, covering botany, conchology, and general zoölogy. The instructors of over thirty thousand children were present. The ablest scientific men in the country on those days imparted freely of their knowledge, suggesting the best means of conveying instruction, and giving a fresh impulse to the educators assembled, who, on their part, warmly appreciated the interest thus shown, and hailed it as one of the new instrumentalities for their improvement.

This hope on their part has not been disappointed. The Society has been consistently faithful to its avowed purpose, and whenever their limited funds have been inadequate to meet the necessary expenditure, generous assistance has been liberally furnished by public-spirited friends.

To render the collections of the Society more instructive, a careful rearrangement has been made throughout, involving immense labor. Thus through all the departments the educational requirements have been recognized, and the successive stages in the history of creation are visibly unfolded to the eye, exemplifying the actual results of scientific knowledge and principles. The hasty observer can have but a feeble conception of the sublime meaning embodied in this careful and scholarly arrangement, but the more fully it is comprehended the more profound will be the appreciation.

Teachers and pupils may often be seen together, thoughtfully pursuing their investigations from hall to hall. Some with artistic skill making drawings, others taking notes, and many more lost in astonishment, and filled with admiration and delight.

But added to this, regular classes have been formed to whom systematic instruction has been given. The study of natural history having been definitely introduced into the public schools, a new zeal has been awakened among the teachers. With some teachers, additional knowledge is a necessity, while with all it is evidently a pleasure. The different branches are pursued under the guidance of able professors in connection with this Society. What is known as the "Teachers' School of Science" has acquired positive importance. Professor Hyatt, the Custodian, has been unceasing in his efforts, and has been

gratified at the extraordinary success which has followed his labors. This special work has been going on for the last ten years, but never with such marked results as during the past year. The number of applicants for admission to these lectures has been four times larger than in any previous period. Over six hundred persons recorded their names as students, while the average attendance on each pleasant day was five hundred. There have been distributed among these students more than one hundred thousand specimens. Yes, during the present year there has actually been given away — not one thousand, or ten thousand, or fifty thousand, but — though one can hardly credit it — one hundred thousand specimens, all of which may be studied by the teachers at their homes, or used for illustration in their schools.

We talk of the wonders of the telephone; yet here is a still more felicitous method of communication; six hundred intelligent teachers, going forth from this place to convey the knowledge gained to thirty thousand young people, full of life and eager to learn. Thus has this Society become more emphatically than ever before — an educational power in the community.

Still it would be unjust to infer, from the facts which have been considered, that the larger portion of the attention of this Society has been given to teaching even instructors. Accomplished naturalists, through its collections and its library, find ample material to extend their investigations. Many come here to test their theories, or more fully to establish their conclusions. Besides which, many of the members, in the course of the year (on their individual account, and for professional purposes), visit distant parts of the country, or take even a wider circuit. They may be found along the whole coast of New England, searching her rocks and sands, or dredging in the deep-sea, or exploring the Gulf-stream, or among the Florida reefs, or skirting the shores of the Great Lakes, or passing down the Valley of the Mississippi, or climbing the Rocky Mountains and the Sierra Nevada, or descending the Western slope, or threading the Pacific Coast, or penetrating to Alaska, and China, and Japan. And when they return, they come to tell us of their experiences, bringing additions to our collections, and recounting in addresses and lectures the result of their scientific investigations. Has not one spoken of Iceland, and another of Labrador? One of Indian relics and Western mounds? One of Colorado with its extensive parks and prolific mines of silver and gold? One of the Calaveras and Mariposa groves with their colossal trees, the famous *Sequoia gigantea*, and the Yosemite Valley with its unequalled waterfalls and stupendous granite domes? One of Alaska, and another of China and Japan?

It is certainly not claiming too much when we say that at the regular meetings of this Society one may hear as interesting and instructive accounts as can be found recorded in all literature. And thus to members, and to all who have the privilege of being present, such opportunities are exceedingly attractive. These addresses and lectures are not the less entertaining because they are instructive. The stories of the Arabian Nights are not more wonderful than are often these narratives. Travellers' Stories they are, but none the less true because stranger than fiction. Sindbad the sailor saw no greater treasures than are those which at times are added to our collections. Some of these are as of yesterday, while others take the mind back to that early time "when the morning stars sang together and all the sons of God shouted for joy!"

Mr. President, I congratulate you on this interesting anniversary, and I am sure the members will unite with me in saying that the time of your official connection with this Society covers one of the brightest periods of its history.

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